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of Conchology

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Feb. 18

THE
QUARTERLY JOURNAL
OF
CONCHOLOGY.

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BOOKS RECEIVED.

Jahrbucher der Deutschen Malakozoologischen Gesellschaft, nebst
Nachrichtsblatt.—Edited by Dr. W. Kobelt.—Oct., 1876,
8vo., pp. 88 and 3 plates. The Editor.

Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft.
—Edited by Dr. W. Kobelt.—Nos. 8—11, Aug. to Novr.
1876, 8vo., pp. 48. The Editor.

The "Valorous" Expedition: Reports by Dr. J. Gwyn Jeffreys,
F.R.S., and Dr. Carpenter, C.B., F.R.S.—8vo., pp. 62 and
3 plates. Dr. Jeffreys.

Descriptions of five new species of Land Shells from Madagascar,
New Guinea, Central Australia, and the Solomon Islands.
—By Henry Adams, F.L.S., and George French Angas,
F.L.S., C.M.Z.S., &c., (From P.Z.S., June, 1876), 8vo.,
pp. 2 and plate. The Authors.

Binnen-Mollusken von Chiwa. Einige neue griechische Schnecken.
By Dr. E. von Martens.—8vo., pp. 10 and plate.
The Author.

Ueber die Zungenbewaffnung der Gattung Struthiolaria.—By G.
Schacko.—8vo., pp. 7, and plate. Dr. E. von Martens.

Ueber einige Japanische Landschnecken Transkaukasische Mol-
lusken.—By Dr. E. von Martens. The Author.

Ueber einige Conchylien aus Westafrika.
Conchylien von den Comoren.
Landschnecken aus Costarica und Guat-
emala. } By Dr. E. v. Martens.

8vo., pp. 26, and plate. The Author.

Journal de Conchyliologie.—Edited by H. Crosse and P. Fischer.
—Oct., 1876, 8vo., pp. 106 and 4 plates. The Editors.

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regarded as forming the transition from *Stenogyra* and its allies to *Megaspira*. —C.P.G.]

M. Crosse then gives a revised diagnosis of the genus, and enumerates and describes the species.

1. *Rhodea Pfeifferi*, Crosse (Pl. I. figs. 1, 1a, and 1b). This is the *R. Californica* of Pfeiffer. The name *Californica* involves an error of locality, the species being really from New Granada. [There has been some discussion as to whether a geographical name found to be erroneous should be altered. M. Mörch in an article in the *Malakozoologische Blätter* says *not*, any more than a man named Armstrong or Schwartz has his name changed because he is weak or fair complexioned, but we are inclined to think that in cases such as the present, where from the rarity of the species the first name has not obtained a very wide circulation it is better to correct a glaring error. —C.P.G.]

R. Pfeifferi is the smallest species of the genus.

2. *R. gigantea*, Mousson (Pl. I, figs. 2, 2a, and 2b), as its name indicates, is the largest species, and at the same time it is that in which the generic characters are most strongly pronounced. It has been found near Bogota and Sonson.
3. *R. Wallisiana*, Dohrn (Pl. I, figs. 3, 3a, 3b) very remarkable as a reversed shell. Its spire is more inflated than that of the other species, causing some resemblance to the *Clausiliæ* of the South American section *Nenia*.

MOUSSON. A.—Coquilles recueillies par M. le Dr. Sievers dans les contrées Transcaucasiques (Shells collected by Dr. Sievers in Transcaucasia).—Notice II, pp. 24—51.

A supplement to the article in the number of the Journal for July 1873. Additional information is given as to species mentioned in the former article, and the following new species are described:—

Hyalina (Mesomphix) semisculpta, Mous. (Pl. II, fig. 1), Persian coast of the Caspian; *Helix (Fruticola) septemgyrata*, (Pl. II, fig. 2), Kers; *H. (campylea?) appelliana* (Pl. II, fig. 3), Kislovodsk, Caucasus; *H. (Macularia) Ghilanica*, (Pl. II, fig. 4), Ghilan, Persia;

Buliminus (Petræus) brevior, (Pl. II, fig. 5), rejectamenta of upper Araxes; *B. (Chondrus) diffusus*, (Pl. II, fig. 6), rejectamenta of the Araxes; *Pupa (Pupilla) superstructa*, (Pl. II, fig. 7), Lailasch, Government of Kutaïs; *P. (Pupilla) micula*, (not figured), Mahmoudli; *Clausilia (Alinda) fusorium*, (Pl. II, fig. 8), Ssori, Government of Kutaïs; *C. (Marpeza) Raddei*, Sievers, (Pl. IV, fig. 3), Mount Schambobel, 6000 feet high; *Cyclostomus caspicus*, Mouss., (Pl. IV, fig. 2), Leukoran; *Vivipara (= Paludina) Costæ*, Neldreich, (Pl. IV, fig. 1), Erzeroum.

FISCHER, DR. P.—Faune malacologique de la vallée de Cauterets, suivie d'une étude sur la répartition des Mollusques dans les Pyrénées (Malacological fauna of the Valley of Cauterets, and study of the distribution of the Mollusca in the Pyrenees).—pp. 51—84.

In the first part of this article Dr. Fischer gives a list of the species inhabiting the Valley of Cauterets; amongst the most remarkable being *Vitrina pyrenaica*, Fèr.; *Helix Desmoulinsi* Farines; *H. Carascalensis*, Fèr.; *Pupa Pyrenæaria*, Mich.; *P. ringens*, Mich.; *P. Bigorriensis*, Charp., (hardly more than a variety of *P. megacheilos*); *Limnæa limosa*, L., var. *glacialis*, Dupuy, found in the Lac de Gaube at an elevation of 1788 mètres; *Pomatias Partioti*, Moq.-Tandon; *Pisidium Casertanum*, Poli, var. *thermale*, Dup. He then distributes the species of the Pyrenees generally according to zones of altitude, characterizing each zone by a species of *Helix*. It may be remarked that *Helix constricta*, one of the most special Pyrenæan shells does not extend above 1000 mètres (zone of *H. carthusiana*). The highest zone, that of *H. carascalensis*, from 2000 to 2500 mètres and even higher, molluscan life appearing not to cease completely much before 2900 mètres, only contains two species, *H. carascalensis* and *Limnæa limosa*, var. *glacialis*. Dr. Fischer gives three, but the third, *H. nubigena*, is only a variety of *H. carascalensis*.

The author then gives a comparative table of the Alpine species, and proceeds to discuss the general distribution of Mollusca in the Palæarctic province, illustrating his views by a map. He admits five regions:—

1. The Northern or Germanic—consisting of the basins of the

- Arctic Ocean, of the Baltic, and of the North Sea.
2. The Western or Atlantic Region—Portugal, Western Spain, Western France, Cornwall, Wales, W. Ireland.
 3. The Southern or Mediterranean region—consisting of the basin of that sea.
 4. The Central or Pontic region—the basin of the Black Sea and of the Sea of Azoff.
 5. The Eastern or Caspian Region—The basin of the Caspian.

It would lead us too far here to discuss this paper as fully as it deserves. Suffice it to say that even those who do not agree with all its conclusions, will find a mine of valuable information on the geographical distribution of the Palæarctic mollusca.

MORELET, A.—Sur quelques coquilles inédites on imparfaitement connues des îles orientales de l'Afrique (Some new or imperfectly known shells from the Eastern African Islands).—pp. 85—91.

The following new species are described :—

Cyclostoma Dupontianum, (Pl. III, fig. 1), Madagascar; *C. defloratum*, (Pl. III, fig. 3), Bourbon (Réunion), subfossil; *Planorbis Mauritanus*, (Pl. III, fig. 7), Mauritius. The opercula of several species are described. Those of *C. Philippianum*, Pfeiffer, and *C. Coquandianum*, Petit, prove those species to belong to *Otopoma*. *Cyclostoma citrinum*, Sowerby, thought by Dr. Pfeiffer to be from Trinidad, is really from Madagascar.

FISCHER, DR. P.—Description d'un Nudibranche inédit, provenant de la Nouvelle Calédonie, avec le catalogue des espèces du genre *Ceratosoma* (Description of a N. Caledonian Nudibranch, and catalogue of the genus *Ceratosoma*).—pp. 91—94.

C. Caledonicum, Fischer.

FISCHER, DR. P.—Note sur les *Helix Buvinieri*, Michaud, et *Asturica*, Pfeiffer. (Note on *H. Buvinieri* and *Asturica*).

Michaud's name *Buvinieri* applies to the same species as Pfeiffer's *Asturica* and being earlier must take priority.

CROSSE H.—Note complémentaire sur quelques espèces de Mollusques terrestres habitant l'île Kauai (Supplementary note on some land shells from Kauai, Sandwich Ids.).—pp. 95—99.

The late Mr. Pease had published in the Journal for 1870 diagnoses of some new *Achatinellæ*, but reserved the right of figuring them, intending to publish a general work on the shells of the Sandwich Islands, in which the figures were to appear. Mr. Pease's death having released the Editors of the Journal from their obligation, M. Crosse now figures the following, all described by Pease in 1870:—

A. (Leptachatina) turgidula, (Pl. IV, fig. 5); *A. (L.) costulosa*, (Pl. III, fig. 4); *A. (L.) balteata*, (Pl. IV, fig. 4); *A. (L.) tenebrosa*, (Pl. III, fig. 5); *A. (L.) lævis* (Pl. IV, fig. 6); *A. (L.) antiqua*, (Pl. III, fig. 6), subfossil; *A. (Amastra) spherica*, (Pl. I, fig. 5); *A. (A.) rugulosa*, (Pl. I, fig. 4).

CROSSE, H.—Note complémentaire sur le genre *Heterocyclus*, sur ses conditions d'existence, et sur la place qu'il doit occuper dans la méthode (Supplementary note on *Heterocyclus*, its habits and its systematic position), pp. 99—100.

First thought perhaps to be terrestrial, and therefore placed by M. Crosse provisionally in the family of *Cyclophoridae*, this genus has turned out to be fresh-water, and should be included amongst the *Valvatidae*.

CROSSE, H.—Diagnosis of *Ampullaria Schrammi* from Cayenne.—p. 102.

Palæontology, pp. 102—116.

Bibliography, pp. 116—135.

News, pp. 135—136. During Prof. Nordenskjöld's Expedition, Dr. Skutsberg found a *Physa* at Cape Schaitanskoi, the most northerly point where fluviatile molluscs have hitherto been met with.

Journal de Conchyliologie, April, 1876.

MOUSSON, A.—Coquilles recueillies par M. le Dr. Sievers, dans la Russie Asiatique (Shells collected by Dr. Sievers in Asiatic Russia).— 3rd notice, pp. 137—148.

Reports the result of another journey made by Dr. Sievers in the mountains of Southern Transcaucasia during last summer.

The following new species and varieties are described :—

Helicarion Sieversi, Mousson (Pl. V, fig. 1) ; *Helix (Xerophila) crenimargo*, Krynicki, var. *obtusior*, M. ; *Chondrus tricollis*, Mouss. (Pl. V, fig. 2) ; *Pupa (Vertigo) pygmæa*, Drap., var. *nitidula*, M. ; *Clausilia (Mentissa) acuminata*, M., (Pl. V, fig. 4) ; *C. (Alinda) griseo-fusca*, M., (Pl. V, fig. 3).

FISCHER, P.—Remarques sur la synonymie et l'habitat de quelques espèces de Mollusques de la Nouvelle-Calédonie (Remarks on the synonymy and habitats of some species of New Caledonian Mollusca).— pp. 148—151.

Pedipes Jouani, Montrouzier, redescribed by Garrett as *P. subglobosus*.

Plecotrema Souverbiei, Montr., redescribed as *P. turrita*, Garrett ; inhabits Taviuni, Fijis.

Rissoina Montrouzieri, Souverbie, *Odostomia interstriata*, Souv., *Rissoina incerta*, Souv., *Pleurotoma scalata*, Souv., all described by Garrett as *R. supracostata*, *O. densecostata*, *R. terebra*, and *Cithara melanostoma* respectively.

Pleurotoma apiculata and *nigrocincta*, Montrouzier, have also been found at the Andaman Islands.

Columbella lactescens, Souverbie, found by Messrs. Nevill at Ceylon.

Trochus fossulatus, Souverbie, found at the Andamans.

Trochus Lamberti, Souverbie, previously described by Messrs. Nevill as *Tallorbis roseola*, from Ceylon.

TAPPARONE-CANEFRI.—Rectifications dans la nomenclature de quelques espèces du genre *Scalaria* (Corrections of the nomenclature of some species of *Scalaria*).—pp. 152—156.

Scalaria simillima, Tapparone, = *S. principalis*, Sowerby nec Pallas.

S. Fischeriana, T.-C., = *S. unicostata*, Sowb., nec Orbigny.

S. microsoma, T.-C., = *S. attenuata*, Sowb., nec Pease.

S. jucunda, T.-C.; Dr. Tapparone-Canefri does not admit the genus *Constantia* and consequently changes the name of *Constantia elegans*, A. Adams, to *jucunda*, as the *elegans* has already been used several times in the genus *Scalaria*.

Scalaria Carpenteri, T.-C., = *S. raricostata*, Carpenter; changed on account of *S. raricosta*, Lamarck.

S. (Psychrosoma) Gouldi, T.-C., = *Opalia borealis*, Gould, nec Beck.

S. (P.) Crosseana, T.-C., = *Opalia bullata*, Carpenter; must be changed unless *Psychrosoma* be raised to the rank of a genus, as there is a *S. bullata*, Sowerby, (1844).

S. (P.) erronea, T.-C.; figured by Sowerby as *S. Mörschi*, Angas, which it is not.

Cirsotrema Kieneri, T.-C., = *S. decussata*, Kiener, nec Lamarck.

FAGOT.—Observations sur la Faune malacologique de Caute-
rets, P. Fischer (Observations on Dr. Fischer's malacological Fauna
of Cauterets).—pp. 156—158.

Replies to certain observations made by Dr. Fischer, in his article in the previous number, on the Catalogue of the Mollusca of the Higher Pyrenees published by Fagot and de Nansouty. M. Fagot states that he has himself found *Carychium minimum* up to a height of more than 1100 mètres, after a few other corrections he adds that *Pomatias crassilabris* extends to about 1900 mètres, not to 1200—1500, only, as stated by Fischer: that *Pupa Pyrenæaria*, var., or perhaps a distinct species, has been found by General de Nansouty at the Col de Sencours (2600 mètres), that the specimens of *Helix carascalensis* found on the Pic du Midi are as small as those of the

Valley of Caunterets, the larger form is found near the Lake of Oncet: and that *Zonites incertus* has been found near Bagnères-de-Bigorre.

GLOYNE, C. P.—Note additionnelle sur l'*Helicina bicincta* (Additional note on *H. bicincta*).—p. 159.

The description given at p. 47, vol. xx, of the Journal is corrected from a more adult specimen since obtained, and the shell is figured. (Pl. V, fig. 5).

MORELET, A.—Note complémentaire sur le *Bulimus Semannei* (Supplementary note on *B. Semannei*).—pp. 160—161.

Additional particulars respecting this species, described by M. Morelet in vol. xxiii of the Journal, p. 282. It may be identical with *B. Bourguignati*, Letourneux, described in 1870-1, and if so Letourneux's name will have priority, but in that case the figure of *B. Bourguignati* given by Letourneux must be incorrect in several particulars. *B. Semannei* is figured (Pl. IV, fig. 7).

GUPPY, R. J. L.—Sur l'existence du genre *Haliotinella* aux Antilles (The presence of the genus *Haliotinella* in the West Indies).—pp. 161—163.

The genus *Haliotinella* was proposed by Dr. Souverbie in the Journal for 1875, (vol. xxiii, p. 3) for a testacelliform shell from New Caledonia, whether terrestrial or marine was not exactly known. Mr. Guppy has now discovered a second species at St. Kitts, and as it was found in sand, with marine shells, considers it to be marine. He proposes the name *patinaria* for the species, but does not give a formal description.

CROSSE, H.—Sur une variété nouvelle du *Voluta musica*, L., (A new variety of *V. musica*).—pp. 163—166.

The new var. *polypleura*, Crosse, of this well known species is distinguished by the absence of the well known music-like lines and of the black spots on the outer side of the peristome, by the presence of numerous costulations in the space between the large

longitudinal ribs, and of several distinct furrows in the sutural region of the whorls. Locality unknown (Pl. V, fig. 6).

CROSSE, H.—Diagnoses Molluscorum novorum (Diagnoses of new Mollusca).—pp. 166—167.

Lucina Schrammi, from Guadeloupe and *Ennea Dupuyana* from the Comoro Islands.

CROSSE and FISCHER.—Diagnosis Helicis novæ, insulæ Madagascar dictæ incolæ (Diagnosis of a new Helix from Madagascar).—pp. 167—168.

Helix Sganziñana, intermediate between *H. lana* and *H. sepulchralis*.

Palæontology,—pp. 168—180.

Bibliography,—pp. 180—214.

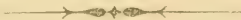
News, pp. 214—216. The vessel on board of which were the collections of Signor de Albertis, made in New Guinea, was shipwrecked and all the collections lost, except six packages, afterwards picked up by another ship.

Mr. Jeffreys is preparing a report to the Royal Society on the results of his dredgings in the Arctic Regions on board H.M.S. "Valorous."

A scientific expedition is about to be fitted out in Norway to dredge between the North Cape and Spitzbergen.

M. Terver has bequeathed his collections of shells to the Natural History Museum of Lyons.

C. P. G.



Rossmässler's Iconographie der Europäischen
Land und Susswasser Mollusken.

Fortgesetzt von Dr. W. KOBELT.

Rossmässler's Iconography of the European Land and Fresh water Mollusca, continued by Dr. W. Kobelt.

Vol. IV, Part 1, pp. 12 and 5 plates, (1875).

Parts 2—4 in one— pp. 32 and 15 plates, (1876).

Wiesbaden, C. W. Kreidel. Price with plain plates, 5 marks 60 pfennigs each part, with coloured plates, 8 marks.

We desire particularly to call the attention of English conchologists to this work, of which we are able to speak in all respects in terms of unqualified praise. Rossmässler's work, of which the publication was interrupted 18 years ago, was intended to furnish figures and descriptions of all species of extra-marine mollusca inhabiting Europe and the other regions making up the Palæarctic Province, but the three volumes published only illustrated about 800 out of 1700 known species. Dr. Kobelt now begins a set of supplementary volumes intended to illustrate and describe not only all species and varieties not contained in Rossmässler's work, but additional figures of forms insufficiently illustrated, so that the whole work will form a most thorough and detailed account of the Palæarctic Molluscan Fauna.

The descriptions and figures do not follow in systematic order, various groups being taken up as opportunity offers, but Dr. Kobelt's Catalogue remedies any inconvenience that might arise from this.

The species are treated in a masterly manner, and with no tendency to an unnecessary multiplication of their number, and here it must be observed that Dr. Kobelt is quite as ready to perform summary execution on his own species as on those of others, when further investigation has shown them to be untenable. Whilst the number of species is thus judiciously restricted, every variety and subvariety is described and figured, of *Helix desertorum* there are 12 separate forms figured, and we regard this not as a superfluous luxury, but as a most valuable aid in the identification of specimens, and contrasting very favourably with many English works on Con-

chology. As Dr. Kobelt remarks, the partisans of the multiplication of species have only to strike out the word "var." in cases where they consider the forms thus described to be species, to make the work suit their views.

The parts already published are devoted to the illustration of various species of *Helix*, especially of the subgenus *Campylæa*. The following may be mentioned as worthy of special notice, *Helix atrolabiata*, *Pouzolzi* (a remarkable dwarf variety) *trizona* (a whole plate of illustrations), *desertorum* (more than a plate of figures), *turcica*, *Mogadorensis*, *mograbina*, *lucorum* (a whole plate), *Buchii*, *pachya*, *ligata* (several varieties), *fætens* (3 vars.), *planospira* (a whole plate), several of the hirsute *Campylææ*, *cingulata* (nearly 2 plates), *cyclolabris* (several vars.), *Möllendorffi*, *Velascoi*, *cantabrica*.

The last plate contains figures of some species of *Zonites*, but the corresponding text has not yet appeared.

If we turn to the material execution of the work, we find equal reason for approval. The form, very small 4to, is in our opinion much more handy and convenient than the large size of Reeve and other "ouvrages de luxe"; each part is enclosed in a case or portfolio, thus guarding against the risk of injury to which works issued in loose sheets and plates are generally exposed; the plates are excellently drawn, (by the accomplished wife of the author,) and well colored, as we have ourselves ascertained by the comparison of several figures with specimens. We regard this last point as very important for unless a plate be really, well and accurately coloured it had better, in our opinion, be left plain, as bad colouring is only misleading.

We would advise all conchologists who take an interest in the European fauna, or in any portion of it, to procure this work—It may be as well to mention that though the remarks are in German, the descriptions of species and varieties are in Latin.

We hope we may be allowed to express a wish to see the first three volumes of Rossmässler re-issued, as they are now out of print, and it would be very desirable to be able to obtain the complete work.

C. P. G.

SPECIES *VERSUS* VARIETIES.

By G. SHERRIFF TYE.

In your issue for Aug. 1875, I read my friend Mr. Simpson's paper under the above title, and as there are several statements therein calculated to mislead the student of conchology, I venture in a spirit of friendliness to point them out.

Dr. Gwyn Jeffreys' axiom—"Groups to deserve the name of species must be distinct from others; because, if any of them are so intimately blended together by intermediate links, so as to make the line of separation too critical, the test fails, and a subordinate group, or what is called a 'variety' is the result"—is a fair groundwork to build upon, but it is scarcely to be expected but that Conchologists will differ from the author of 'British Conchology' as to what is "too critical" a separation, for as no absolute line can be drawn, the best master can only guide the student by an expression of his own opinion. Dr. Jeffreys' remark that "every naturalist is at perfect liberty to follow the bent of his own discretion or inclination in the extension or reduction of species, subject only to the opinion of his scientific compeers" must be read with the context, and it will then be seen that the author is uttering a mild protest against there being no "arbiter specierum" to whom when in doubt or difficulty a naturalist could apply; hence Mr. Simpson somewhat perverts the sense of it, because Mr. Jeffreys does not speak of this proceeding of naturalists as a "right" but as a "liberty" taken by them in the absence of a properly constituted authority.

I proceed to follow Mr. Simpson's reasoning, taking the genus *Succinea*. We must bear in mind that in describing a shell an author endeavors to use language which will guide the tyro to the *style* of the shell he wishes to call his attention to, hence, in describing *Succinea elegans* Dr. Jeffreys says that its variety *ochracea* "forms a passage to" *S. oblonga*; but this is not saying that it is not distinct from *S. oblonga*, surely it does not follow that because one species "leads" to another that therefore it *belongs* to it, or following this reasoning we might have but one species of *Succinea* in the world

for without doubt, links exist connecting the extreme forms, and in determining a species we have to examine correlative forms widespread over a geographical region.

Dr. Jeffreys' remarks about the *Pisidia*—"size, substance, sculpture, and lustre are not of much account"—without doubt apply only to that genus, and are used touching the determination of a species. Thus we have *P. fontinale* and its four varieties varying much in all these qualifications, yet they all belong to one species; at least this is the opinion of a master of the science who has examined "thousands of specimens" collected from all parts of Europe.

Next the *Zonites*—all our species are well marked and I cannot admit that the distinctions between any of them are "very trifling." The two approaching nearest to each other are *Z. alliarius* and *Z. glaber*, but the latter is much the largest and has a smaller umbilicus than *alliarius*, this latter character being very striking in continental specimens which I have examined. *Z. purus* and *Z. radiatulus* are certainly very distinct and preserve their character, although often occurring together, and we cannot dispute the identity of a species because "the lens" is a necessary vehicle to its proper examination, or we might as well dispute the distinctness of all microscopic organisms of infinitely greater difficulty of examination.

Helix nemoralis and *H. hortensis*, although occurring together, * are not considered by Dr. Jeffreys to be distinct, or, as we might put it, *Helix nemoralis* is found in company with another form—*H. hortensis*, with which it is connected by the variety *hybrida*, i. e., not preserving its distinctive character, but intermingling with *hortensis* and producing intermediate forms; on the other hand, if the two forms never occurred together they would have to be regarded with suspicion, being so nearly alike, as constituting a species and variety; and it is this reasoning Dr. Jeffreys applies to the var. of *Limnaea palustris* (p. 114)—as it occurred *alone* it was to be regarded as a local variety, whereas, had it occurred with other forms and still maintained its character without intermingling, it would have had some claim to specific distinction. Of course this is a rule to be

* Dr. Jeffreys is certainly aware of the fact of the two forms occurring together and mentions the circumstance in the 5th volume of his excellent work.

applied, with others, as an assistant in determining a species, but it is not *absolute*, nor is *any* rule which can be laid down. I have tried to explain the grounds upon which Dr. Jeffreys has proceeded in joining *H. nemoralis* and *H. hortensis* together, but I must here record my belief in their distinctness.

Mr. Simpson asks—speaking of *Helix hortensis*—how is it that the variety becomes permanent? Do not all shells (mollusks?) follow the same laws as other animals in returning back to the original, or in throwing off other varieties which differ from the variety itself as much as it differs from the typical species? Now “varieties are of two kinds—*permanent* and *local*”—the former are distributed throughout the country, the latter are confined to one spot or district; as “*permanent*” forms we may quote *Unio tumidus* var. *radiata*, *Anodonta anatina* var. *ventricosa*, *Limnæa peregra* var. *intermedia*, and *Helix caperata* var. *ornata*; as “*local*” we may take *Unio pictorum* var. *compressa*, *Anodonta anatina* var. *complanata*, *Limnæa peregra* var. *picta*, and *Helix virgata* var. *carinata*.

There is abundant evidence to shew that some species of mollusks are more subject to variation than others, as among the higher animals, and it is this tendency to vary which would make “confusion more confounded” by attempting to *name* varieties.

I must confess I am surprised at Mr. Simpson finding specimens of *Helix rufescens* and *H. hispida* “exactly alike” and should like to see examples. It seems to me, that the hispid epidermis—at all stages of its growth—of the latter and its smaller size (excluding all other characters) form prominent features of distinction not to be mistaken.

As to whether the separation of *Helix concinna* and *H. hispida* is “too critical” or not, I must say that I think it is.

The differences between *Clausilia biplicata* and *C. laminata* are decisive—no such distinctive characters obtain with the vars. of *Carychium minimum*. Again, the difference between *Cochlicopa tridens* and *C. lubrica* cannot possibly be considered as “slight” as that between the variations of *C. minimum*. The latter varies, it is true, but the same general character runs through all the variations, and they are all so intimately blended that it would be useless to attempt to name any of them, I have examined numbers of the American

form (*C. exiguum*, Say), and although the extreme forms differ, I cannot see any grounds for separating it from *C. minimum*.

The grounds for uniting our two species of *Cochlicopa* in one genus, are as good as those for uniting so many varied forms of *Bulimus* or *Helix*, there is no essential difference between these creatures and *Bulimus*, and it would be proper to place them in that genus, I think, but of course this is a matter of opinion.

The important malacological difference between *Balea* and *Clausilia* is sufficient warranty for placing them in distinct genera.

I quite agree with Mr. Simpson touching the two species of *Planorbis*—*complanatus* and *carinatus*. I have often tried, but always failed, to find any grounds for separating them. I also think with him, that the decollation of a shell clearly cannot make it a variety, and I can give undoubted proof that it is produced by circumstances beyond the control of the mollusk.



Helix virgata monst. sinistrorsa near Pollington.—

Whilst shell collecting between Goole and Askern, in the beginning of September, 1875, I found amongst others, the following local species. Fine specimens of *Helix fusca* occurred plentifully on an hedgebank between Snaith and Pollington. At Balne Moor I found my greatest prize, a perfect, sinistral specimen of *Helix virgata*, as well as a number of *Helix caperata* of a perfectly white color, some of which were beautifully marked with translucent bands.

Limnæa peregra var. *albida* near Askern.—On May 15th 1875 whilst engaged in examining the various ponds and ditches situate between Askern and Doncaster, I discovered a number of specimens of *Limnæa peregra* of a very clear white color, they were readily distinguished from the normal form, while in the water, as they appeared to be of a very light bluish-grey color. Dr. Jeffreys to whom I have submitted them says “the *Limnæa peregra* is an interesting (and I believe new) variety corresponding to the variety *albida* of *Limnæa auricularia*.”—Lister Peace, 1875.



SPECIES *VERSUS* VARIETIES.

By C. P. GLOYNE.

The subject of the discrimination of species and varieties having been under discussion in the pages of this Journal on two occasions lately, I beg to offer a few remarks that have occurred to me.

I would first observe that neither of the gentlemen who have taken part in the discussion, appear to have distinguished a *variety* from a *monstrosity*. The divergence of an individual from the normal form from pathological causes is always designated by the latter name. It would be as reasonable to make a var. *conjuncta* of the human race for the Siamese twins or a var. *pusilla* for Tom Thumb as to call a sinistral specimen of a commonly dextral shell var. *perversa*. Still more is this the case when the malformation is not even congenital, but has been produced during the lifetime of the animal. This at once disposes of such cases as the var. *decollata* of *Lymnea stagnalis* proposed by Mr. Simpson.

Leaving aside these monstrosities however, we have many instances of true variation where it is difficult to draw the line between individual variation, varieties and distinct species and there is by no means a concurrence of opinion amongst naturalists as to where to fix the limits. As those who have followed the foreign literature of the subject are aware, a certain party amongst French conchologists, "la nouvelle école", carry the subdivision of species to about the furthest limit possible, short of making a species out of every specimen. M. Bourguignat is the leader of this school, which started an organ called the "Annales de Malacologie," which however was very short lived. Dr. Kobelt in a note to his excellent Catalogue of European Land and Fresh water shells observes if all the genera were to be treated as this school has treated the genus *Cionella*, the list of European shells would soon reach the dimensions of a dictionary. I need scarcely add that these extravagances are repudiated by the really leading conchologists of France such as M. M. Crosse and Fischer. This "nouvelle école" has furthermore distinguished itself by the use of Greek derivations for specific

names, contrary to the generally accepted rule that generic names only are to be taken from the Greek, and inflicting upon naturalists a number of such jaw-breaking words as "*sclerotricha*" "*apalolena*" etc, notwithstanding that it ought to have been known that one of the great hindrances to the spread of zoology is the terror such names inspire amongst those who are thinking of taking up the subject.

Before the doctrine of evolution was promulgated, the definition of a species was easy, it was then said to consist of all the individuals descended from an originally created pair, but now such a definition can no longer stand, and a species can only be considered as "true" for a limited period of time. We therefore must regard the difference between a species and a variety as one of degree rather than of kind, and from that point of view, Dr. Kobelt's definition appears to me to be about the best I have seen. He regards as distinct species such forms as can be readily distinguished one from another, without the necessity of comparative measurements, and without the aid of some indication of the locality, and it should also be added without intermediate gradations. This must at the same time be acknowledged to be rather an empirical test, than a statement of what actually constitutes a species in nature.

In my opinion the true difference between a species and a variety will be found to consist in the production of perfectly fertile hybrids by the latter—I do not make this statement in a pre-Darwinian sense, I believe for instance that *Equus caballus* and *Equus asinus* are simply modifications of a primitive *Equus*, but I regard that point of differentiation at which two forms are no longer capable of mutual reproduction, or only of the production of infertile hybrids, as securing the perpetuation of the two forms, and this giving them the range of species.

Varieties are well defined as "incipient species". Divergence is beginning, and may if circumstances favour lead to the production of a distinct species.

An intermediate class might here be introduced for variations dependent on some local peculiarity of soil etc., affecting all the individuals within range of the circumstances, but ceasing when the

cause is removed, e. g., the var. *tenuis* of *Helix aspersa* found in places poorly provided with carbonate of lime—like the Channel Islands. I do not consider that this variation would ever develop into a distinct species.

We now have reached the lowest degree—that of individual variation. This varies considerably in different species. In *Helix picta* it is great, one may have some dozens of specimens and not two exactly alike in colour and markings. In some of the *Veritinae* there is even greater diversity; in the largest suite of specimens it would be difficult to find any two between which some slight difference would not be detected. Other species on the contrary are remarkable for the almost perfect similarity of all the specimens. I once had over 50 specimens of the Porto Rican *Clausilia tridens*, and to use a common expression they were all as “alike as two peas”. This was accounted for in my opinion by the West Indies being an unfavourable climate for *Clausilia*, and the same causes that have prevented the genus extending itself then have kept the single species true to its original form.

When individual variations are also malformations due to pathological causes they are termed “monstrosities”.

In the practical application of these rules to particular cases, there will often be a diversity of opinion, especially as it is not always possible to test hybridity by actual experiment. Especially with regard to the marine mollusca there would be almost insuperable difficulties to doing this in most cases, and it is for this reason that in my opinion a practical, though empirical test like that laid down by Dr. Kobelt becomes valuable.

Mr. Simpson's illustrations of *Clausilia biplicata* and *laminata* was certainly—as pointed out by Mr. Marshall—a most unfortunate one. Not only are these species most readily distinguishable, but they belong to quite different subgenera.

That characters have varying importance according to circumstances is a well known and recognized fact, and must be the case in a natural classification, which is founded not on particular organs arbitrarily taken as the basis of arrangement, as the pistils and stamens in the Linnean botanical arrangement, but on the general

affinities of the forms, as shown in their whole structure. There is therefore nothing astonishing in the fact that differences which in some cases are taken to constitute species, are in others considered varietal only. Color for instance which in some species is eminently variable, is in others perfectly constant.



ON SPECIES OF MARINE SHELLS FOUND ON THE COASTS OF SOUTH AUSTRALIA.

By GEORGE FRENCH ANGAS, F.L.S., C.M.Z.S., F.R.G.S., &c.

Mr. W. T. Bednall has reprinted in Adelaide, my list of the Marine shells of the Province of South Australia, which appeared in the Proceedings of the Zoological Society of London for 1865, at which period the number of known species amounted to about 236 univalves and 97 bivalves. Consequent upon his researches since I left the province, Mr. Bednall has been enabled to add several additional species to the list, thus bringing up the total number of species to about 358.

Murex Angasi, Crosse, hitherto known only as coming from New South Wales, he gives as from Port Lincoln.

A *Fusus* sp ? from the Semaphore beach.

A new *Epidromis* (*E. Bednalli*, Brazier), from Guichen Bay.

Buccinum lacteum, Reeve, from Port Elliot and Port Wallaroo.

A variety of *Nassa suturalis* Lam., from Port Lincoln ; and

Nassa Jacksoniana, Kiener, from the Semaphore.

Melo Miltonis, Gray, from Fowler's Bay.

Amalda marginata, Lamk., from Port Lincoln and the South coast.

Mitra pica, Reeve, from Port Elliot, and Kangaroo Island.

Opalia australis, Lamk., (a New South Wales species), from the South coast.

Fissurella scutella, Gray, from Guichen and Holdfast Bays.

Macrochisma Tasmaniæ, from South-East coast.

Emarginula Tasmaniæ, Sow., and

Emarginula dilecta, A. Ad., from Guichen Bay.

Lepidopleurus antiquus, Reeve, Aldinga Bay.

Mr. Bednall also gives *Lorica cimolia* of Reeve as coming from South Australia ; I have never met with it except in New South Wales ; he may have confounded it with *Lorica Angasi*, H. Ad., which I discovered at Rapid Bay.

His final addition to the univalves is *Merinula xanthostoma* of H. & A. Adams.

Amongst the bivalves is *Aspergillum Strangei*, a very rare Port Jackson shell, which he has obtained in St. Vincent's Gulf.

Two species of *Veneridæ*, viz : *Marcia lævigata*, Sow., and *Tivela undulosa*, Lam.

Single valves of a *Trigonia* from the Semaphore Beach, which he gives as *T. margaritacea*, Lam.

A *Limopsis*, ? *Belcheri*, from Guichen Bay ; and a species of *Placunanomia*, not identified, from Henley Beach.

ANALOGOUS AFRICAN AND WEST INDIAN SPECIES OF *MARGINELLA*.

By F. P. MARRAT.

AFRICA.

Marginella Keenii, Marrat,
Port Elizabeth.

M. quadrifasciata, Marrat.

M. Dunkeri, Krauss, and vars.

WEST INDIES.

Marginella pellucida, Pfeiffer,
= *diaphana*, Kiener.

M. tæniata, Sow.

M. zonata, Kiener, and vars.

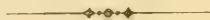
DESCRIPTION OF A NEW SPECIES OF *PUSIONELLA*.

By F. P. MARRAT.

Pusionella recurvirostris, n. s.

Pus. testa elongato-fusiformi, acuminata, ad basin recurva, intus extusque livido-olivacea, anfractibus superne declivibus, apicem versus plicatis et subnodosis, cæteris lævibus, politis, apertura ovali, labri limbo lævi.

Hab. Cape Blanco, West coast of Africa.

ON THE HABITS OF *HELIX FUSCA*.

By CHARLES ASHFORD.

On Christmas day a few winters ago I was walking with some friends through Saltram Wood, three miles from Plymouth, when I noticed two individuals of *H. fusca* upon the herbage of the bank. As the weather was cold I was rather surprised to find this species abroad while its more thickly clad congeners were hybernating below the surface. The temperature fell considerably during the next few days, and I visited the spot repeatedly to find, if possible, the limit to the endurance of this slender mollusk. The following notes from my memoranda at the time will best show the result. Dec. 26th—the thermometer at early morning registered 26° and the herbage was fringed with sparkling crystals of rime, notwithstanding which the little creatures were abroad and lively, crawling up the blades of the Great Hairy Woodrush (*Luzula sylvatica*) not simply indifferent to a temperature which benumbed my own extremities but positively agile. Dec. 27th—min. temp. 28°. Dec. 28th—min. temp. 28°. This morning *H. fusca* still about and vigorous. Dec. 29th—temp. 25°. Dec. 30th—temp. 32°. After an hour's search I

found only one individual. Dec. 31st, temp. 26°—None to be seen. The frost continued without intermission throughout the first week of the new year, during which time on the occasion of two visits to the same and neighbouring spots I failed to find it about, nor could I discover any at the roots of the *Luzula*. Jan. 9th—Milder. *H. fusca* again abroad, and more abundantly on the 10th.

It appears then that a continuance of a temperature below freezing-point for six successive days was necessary to drive to its retreat a mollusk protected by a shell so thin as to be almost membranous, and that on the slightest return to warmer weather, the circulation of the animal sufficiently increased to enable it to resume activity. I unfortunately neglected to note the number of pulsations of the systems per minute.

It is somewhat singular that another thinly-clad snail, *Vitrina pellucida*,—a tenant, by the way, too large for the house it occupies and therefore still less protected than *Helix fusca*—retires from only severe cold. It may be found almost any part of the winter during mild weather and I have noticed it even crawling over frost-covered leaves. I want to know more about *H. fusca* and shall be glad to compare notes with other observers as to its winter habits. Is it usually the case that it does not hibernate for the season? Upon what plants does it generally feed? When it retires, does it bury itself, or remain near the surface? Though very generally distributed (according to our authorities) I must confess to having met with it in only two localities. I hope some of your correspondents will record in your pages the result of their observations of this species.

NOTE ON THE SYNONYMY OF *PLANORBIS*
GLABER, (JEFFREYS).

By WM. NELSON.

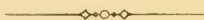
In 1840, Dr. J. E. Gray—in his work entitled “A Manual of the Land and Freshwater Shells of the British Islands”—speaking of *P. lævis*, Alder, remarks upon its similarity to *P. parvus*, Say.

Dr. Jeffreys in the 1st vol. of "British Conchology" says it is the *Planorbis laevis*, Alder, and probably the *P. cornu*, Ehrenberg, the *P. Rossmassleri*, Auerswald, and that Dr. E. von Martens is of the opinion that it is also the *P. gyrenbis* of von Seckendorff. In the 5th vol. of "British Conchology" he adds *P. arcticus*, Möller and probably *P. sibiricus*, Dunker.

In 1872, Dr. Jeffreys in his article "The Mollusca of Europe compared with those of Eastern North America" confirms the identity of *P. parvus*, Say with *P. glaber*, Jeff.

Having lately received from Mr. H. Hemphill of California, U.S., specimens of *Planorbis* (*Gyraulus*) *vermicularis*, Gld, from Oregon. I find them to be identical with well-grown specimens of *P. glaber*, Jeff., from Sutton Park, Birmingham.

The name *Planorbis parvus*, Say, has the priority and may necessitate a change that will be somewhat inconvenient to British conchologists who have become familiar with the name given to it by our great leader in the science Dr. Jeffreys.



THE MOLLUSCA OF SANTA ROSA ISLAND, CALIFORNIA, U. S.

By LORENZO G. YATES.

Santa Rosa is one of the chain of Islands forming the southerly side of what is known as "The Santa Barbara Channel," on the coast of California, about 300 miles South of San Francisco. The Island was formerly thickly inhabited by a race of Indians now extinct.

The following list includes the mollusca found living, and those used by the aborigines for food and ornament, collected by the writer during a recent expedition to the Island, in search of antiquities for the Smithsonian Institution.

The species marked × were used for food; those marked * for ornaments and money; and those marked ‡ were used for paint cups and probably for food.

Pholadidea penita, <i>Cour.</i>	Cardium corbis, <i>Mart.</i>
„ ovoidea, <i>Gld.</i>	× „ quadragenarium, <i>Conr.</i>
Parapholas Californica, <i>Con.</i>	„ blandum, <i>Gld.</i>
Saxicava pholadis, <i>L.</i>	* Liocardium elatum, <i>Say.</i>
Glycimeris generosa, <i>Gld.</i>	Lazaria subquadrata, <i>Cpr.</i>
Cryptomya Californica, <i>Cour.</i>	Lucina Californica, <i>Conr.</i>
Schizothærus Nuttalli, <i>Conr.</i>	Diplodonta orbella, <i>Gld.</i>
Thracia curta, <i>Conr.</i>	„ „ var.
Entodesma saxicola, <i>Baird.</i>	Kellia Laperousii, <i>Desh.</i>
Mytilimeria Nuttalli, <i>Conr.</i>	„ suborbicularis, <i>Mont.</i>
Solen sicarius, <i>Gld.</i>	× Mytilus Californianus, <i>Conr.</i>
Macoma Yoldiformis, <i>Cpr.</i>	× Septifer bifurcatus, <i>Rve.</i>
„ nasuta, <i>Conr.</i>	Modiola modiolus, <i>Linn.</i>
„ inquinata, <i>Desh.</i>	Adula falcata, <i>Gld.</i>
Tellina Bodegensis, <i>Hds.</i>	Lithophagus plumula, <i>Hant.</i>
Lutricola alta, <i>Conr.</i>	Axinæa intermedia, <i>Brod.</i>
Cumingia Californica, <i>Conr.</i>	„ septrionalis, <i>Midd.</i>
Standella planulata, <i>Conr.</i>	Pecten hastatus, <i>Sby.</i>
* Pachydesma crassatelloides, <i>Cd</i>	„ „ var. Hindsii, <i>Cpr.</i>
Psephis tantilla, <i>Gld.</i>	† „ æquisulcatus, <i>Cpr.</i>
× Chione succincta, <i>Val.</i>	„ latiauritus, <i>Conr.</i>
× „ simillima, <i>Sby.</i>	* Hinnites giganteus, <i>Gray.</i>
× Tapes staminea, <i>Conr.</i>	× Ostrea lurida, <i>Cpr.</i>
„ „ var. orbella <i>Cpr.</i>	Succinea rusticana, <i>Gld.</i>
* Saxidomus gracilis, <i>Gld.</i>	Helix Ayresiana, <i>Newc.</i>
= „ aratus, <i>Gld.</i>	Physa Gabbii, <i>Tryon var.</i>
„ Nuttalli, <i>Conr.</i>	* Dentalium Indianorum, <i>Cpr.</i>
Rupellaria lamillifera, <i>Conr.</i>	Mopalia muscosa, <i>Gld.</i>
× Petricola carditoides, <i>Conr.</i>	× Ischnochiton Magdalensis, <i>Hds</i>
× Chama exogyra, <i>Conr.</i>	Nacella incesso, <i>Hds.</i>
„ pellucida, <i>Sby.</i>	„ paleacea, <i>Gld.</i>
„ spinosa, <i>Sby.</i>	Acmaea patina, <i>Esch.</i>

- | | |
|---|--|
| × <i>Acmaea persona</i> , <i>Esch.</i> | <i>Crepidula dorsata</i> var. <i>lingu-</i> |
| × „ <i>scabra</i> , <i>Nutt.</i> | <i>lata</i> , <i>Gld.</i> |
| „ <i>spectrum</i> , <i>Nutt.</i> | × „ <i>adunca</i> , <i>Sby.</i> |
| „ <i>crebrifilatum</i> , <i>Cpr.</i> | „ <i>navicelloides</i> , <i>Nutt.</i> |
| „ „ var. | „ „ var. <i>explanata</i> , <i>Gld.</i> |
| ‡ <i>Lottia gigantea</i> , <i>Gray.</i> | <i>Hipponyx cranioides</i> , <i>Cpr.</i> |
| <i>Scurria mitra</i> , <i>Esch.</i> | <i>Serpulorbis squamigerus</i> , <i>Cpr.</i> |
| <i>Rowellia radiata</i> , <i>Cooper.</i> | × <i>Cerithidea sacrata</i> , <i>Gld.</i> |
| × <i>Fissurella volcano</i> , <i>Rve.</i> | <i>Bittium filsum</i> , <i>Gld.</i> |
| <i>Glyphis aspera</i> , <i>Esch.</i> | „ <i>quadrifilatum</i> , <i>Cpr.</i> |
| * <i>Lucapina crenulata</i> , <i>Sby.</i> | „ „ var. |
| <i>Clypidella bimaculata</i> , <i>Dall.</i> | „ <i>asperum</i> , <i>Cpr.</i> |
| × <i>Haliotis Cracherodii</i> , <i>Leach.</i> | <i>Litorina planaxis</i> , <i>Nutt.</i> |
| × „ <i>corrugata</i> , <i>Gray.</i> | „ <i>scutulata</i> , <i>Gld.</i> |
| * „ <i>rufescens</i> , <i>Sw.</i> | „ „ var. |
| <i>Phasianella compta</i> , <i>Gld.</i> | <i>Lacuna variegata</i> , <i>Cpr.</i> |
| „ „ var. <i>pulloides</i> , | „ <i>unifasciata</i> , <i>Cpr.</i> |
| * <i>Pomaulax undosus</i> , <i>Wood.</i> | * <i>Luponia spadicea</i> , <i>Sw.</i> |
| <i>Leptothyra sanguinea</i> , <i>Cpr.</i> | * <i>Trivia Californiana</i> , <i>Gray.</i> |
| „ <i>bacula</i> , <i>Cpr.</i> | * „ <i>Solandri</i> , <i>Sby.</i> |
| „ „ var. | <i>Erato vitellina</i> , <i>Hds.</i> |
| × <i>Trochiscus Norrisii</i> , <i>Sby.</i> | <i>Drillia inermis</i> , <i>Hds.</i> |
| × <i>Chlorostoma funebre</i> , <i>Ad.</i> | „ <i>meesta</i> , <i>Cpr.</i> |
| „ „ var. <i>subapertum</i> , <i>Cpr.</i> | „ <i>torosa</i> , <i>Cpr.</i> |
| „ „ <i>brunneum</i> , <i>Phil.</i> | „ „ var. <i>aurantia</i> , <i>Cpr.</i> |
| „ „ <i>aureotinctum</i> , <i>Fbs.</i> | <i>Mangelia variegata</i> , <i>Cpr.</i> |
| <i>Calliostomacaniculatum</i> , <i>Mrt</i> | „ <i>interlirata</i> , <i>Sts.</i> |
| „ <i>costatum</i> , <i>Mart.</i> | <i>Mitromorpha aspera</i> , <i>Cpr.</i> |
| „ <i>annulatum</i> , <i>Mart.</i> | × <i>Conus Californicus</i> , <i>Hds.</i> |
| „ <i>gemmulatum</i> , <i>Cpr.</i> | <i>Odostomia grvida</i> , <i>Gld.</i> |
| „ <i>splendens</i> , <i>Cpr.</i> | <i>Chemnitzia tenuicula</i> , <i>Gld.</i> |
| <i>Margarita acuticostata</i> , <i>Cpr.</i> | <i>Scalaria tincta</i> , <i>Cpr.</i> |

<i>Scalaria gracilis</i> , <i>Sby.</i>	<i>Purpura saxicola</i> , var. <i>emarginata</i> , <i>Desh.</i>
<i>Cerithiopsis tuberculata</i> , <i>Mont.</i>	
× <i>Lunatia Lewisii</i> , <i>Gld.</i>	<i>Monoceros engonatum</i> , <i>Conr.</i>
<i>Lamellaria Stearnsiana</i> , <i>Dall.</i>	„ „ var. <i>spiratum</i> , <i>Blainv.</i>
* <i>Mitra maura</i> , <i>Sw.</i>	„ „ <i>lapilloides</i> , <i>Conr.</i>
<i>Volvarina varia</i> , <i>Sby.</i>	<i>Ocenebra lurida</i> , <i>Midd.</i>
* <i>Olivella biplicata</i> , <i>Sby.</i>	
<i>Nassa fossata</i> , <i>Gld.</i>	„ „ var. „
„ <i>perpinguis</i> , <i>Hds.</i>	„ „ <i>interfossa</i> , var. <i>atro-</i>
„ <i>mendica</i> , <i>Gld.</i>	„ „ <i>purpurea</i> , <i>Cpr.</i>
„ <i>Cooperi</i> , <i>Fbs.</i>	„ „ var. <i>muricata</i> , <i>Coop.</i>
<i>Amphissa corrugata</i> , <i>Rve.</i>	„ „ var. <i>clathrata</i> .
„ „ var. <i>versicolor</i> , <i>Dall.</i>	× „ „ <i>intertexta</i> , <i>Stearns.</i>
× <i>Purpura canaliculata</i> , <i>Duch.</i>	<i>Nitidella Gouldii</i> , <i>Cpr.</i>
× „ <i>saxicola</i> , <i>Val.</i>	<i>Muricidea fasceolata</i> , <i>Hds.</i>
„ „ var. <i>fuscata</i> , <i>Fbs.</i>	<i>Fusus geniculus</i> , <i>Conr.</i>
	<i>Anachis penicillata</i> , <i>Cpr.</i>

THE CONCHOLOGICAL CLUB, LEEDS.

We have the gratification of being able to announce the successful establishment of a working Conchological Club in Leeds. Its meetings are held fortnightly on Thursday evenings, throughout the year. The Club consists not only of resident members, but also of non-resident corresponding members who contribute regularly by letter and specimens to the work of the society.

The aims and objects are the advancement of conchological science by the exhibition of specimens and the communication of information relating to every department of the science, whether anatomy, physiology, distribution, classification or economy. Taking one of these objects for example, geographical distribution, we

notice the satisfactory and systematic way in which its investigation is commenced, with feelings of pleasure.

Geographically, the endeavour is, in the first place, to work out the conchology in detail of the county (Yorkshire) in which the town is situated; for this purpose the county is divided into a number of subdistricts based upon the river-basins and watersheds, and also upon the geological structure and topographical configuration of the ground. At the end of every season will be published in a tabular form a list of the shells exhibited, and showing at the same time to what extent the shells of each subdistrict have been worked at. This will also show what are the deficiencies in the records for each subdistrict—a point which it is often as necessary for the investigator to know as the converse is. We cannot too heartily approve the principle of naturalists working their own districts in a systematic and detailed manner.

In the second place it is intended to exhibit and place on record shells from all other parts of the British Isles and of the world at large and ultimately it may be desirable to adopt some modified plan of tabulating the results in this direction also.

While this is being done for geographical conchology every other department is intended to be taken up at the meetings.

We have no doubt that assistance will be welcomed and are quite sure that any information will be furnished by the officers of the Society, or by the Secretary W. D. Roebuck, Esq., 9, Sunny Bank Terrace, Leeds.

Ancylus fluviatilis var. gibbosa, (Bourguignat), near Leeds.—In 1862, I found characteristic specimens of this well marked variety, adhering to confervoid covered stones in a shallow rivulet near its source, in a dense portion of a wood at Thorner, near Leeds.

On recently revisiting the locality I was pleased to find this interesting form still existing in the same place—W. NELSON.

BIBLIOGRAPHY.

"Descriptions of five new species of Land-shells from Madagascar, New Guinea, Central Australia, and the Solomon Islands.—By Henry Adams, F.L.S., and George French Angas, C.M.Z.S., F.L.S., &c.

P.Z.S., 1876, pp. 488—490 and plate xlvii.

Helix malantensis (figs. 1, 2, 3). Malanta Islands, Solomon Archipelago.

A trochiform species, differing from *H. Guadalcanarensis*, Cox, in being more conical, the aperture smaller, with the outer lip much less flattened and expanded, as well as by the absence of the black margin at the angle of the reflexion, behind the outer lip, and the purple spot on the columella, and in having the base broadly stained and zoned with chestnut.

Helix Comriei (figs. 4, 5). Shores of Huon Gulf, South-east New Guinea.

This is allied to *H. Brumeriensis*, Forbes, but is smaller, without the black lip of the latter. Dr. Comrie also obtained several specimens of *H. Brumeriensis* at the same place, only known hitherto by the single specimen in the British Museum, collected by the late Mr. J. McGillivray at Brumer Island, during the voyage of H.M.S. Rattlesnake in 1849.

Helix robillardi (figs. 6, 7). South-west Madagascar.

Helix feneriffensis (figs. 8, 9). Feneriffa Islands, north-west Madagascar.

Helix eyrei (figs. 10-12). Shores of Lake Eyre, Central Australia.

This species belongs to the group of discoidal Helices from the arid regions of South Australia to which, Arthur Adams gave the name of *Angasella*, and to which *H. cyrtopleura*, Pfr., and *H. Phillipsiana*, Angas, also belong.

Notes on the Sub-generic character of *Helix Jamaicensis*, Chem., and on certain Terrestrial Mollusks from Haiti; with description of a New Species of *Helix* from Colorado.—By Thomas Bland.

Reprinted from the Annals of the Lyceum of Nat. Hist., New York, vol. xi, June, 1875, pp. 146—154.

A new species of *Helix* is described in this important paper—*Helix Ingersollii*, from Colorado.

Helix (Thelidomus) Jamaicensis, Chem. This species has the same form of jaw and dentition as *H. aspera* and *H. discolor*.

Von Martens gives it as the type of *Liochila*, but it has the same form of jaw and dentition as *H. aspera* and *H. discolor* and belongs to *Thelidomus*; *Liochila* must therefore be placed in its synonymy. *Helix picta*, Born, which he associates with *Jamaicensis*, has the same type of jaw and dentition as *H. muscarum*, Lea, the type of *Polymita*; *H. picta* therefore will belong to same subgenus.

A new var. of *H. Jamaicensis* is described, differing from the usual form in its more laterally produced aperture, the columellar margin being oblique with a very broad callus, having 2 or 3 denticles across its edge, showing in this respect alliance with *H. aspera*. It usually has a small tooth on the parietal wall.

Helix (Eumycratera) obliterated, Fér. Owing to the discovery by Mr. V. P. Parkhurst of a dead specimen of this species near Port au Prince, Mr. Bland is disposed to think that Haiti may be its true habitat. *Helix angulata*, Fér. of Porto Rico is a geographical var. of this species.

Helix intusplacata, Pfr. Found numerously near Port au Prince by Mr. V. P. Parkhurst. It is synonymous with *H. Smithiana*, Pfr., which was found on Mount Platon, thirty miles north-east of Aux Cayes and described by Pfeiffer from specimens sent by Mr. Bland.

Helicina Cumingiana, Pfr. This species is recognised by its well

developed striæ, subangular periphery, &c. Pfeiffer was unacquainted with the habitat. Sowerby and Reeve both assign it to St Domingo under the name of *Cumingii*, Mr. V. P. Parkhurst found one dead specimen near Port au Prince, Haiti.

At or near Port au Prince, Mr. Parkhurst also found *Cyclotus floccosus*, Shuttl., *Cyclostomus Aminensis*, Pfr., *Chondropoma serraticostata*, Wein., *Helicina rugosa*, Pfr. and *Paivana*, Pfr., *Helix pubescens* ? Pfeiffer, *crispata* and *indistincta*, Fér., *cepa* Müll., *Cylindrella gracilicollis*, Fér., *Macroceramus Klatteanus*, Bld., and some species not yet determined and believed to be new.

Helix (Microphysa) Ingersollii, n. s. Discovered by Mr. E. Ingersoll in various localities on the S. W. of Colorado. At Howardsville, Baker's Park, it was abundant in wet places on the mountains 9,300 ft. above the sea. The finest specimens were found at Cunningham Gulch, clinging to the almost vertical face of a trachyte cliff, at an elevation of 11,000 feet, found also on the Southern Slopes of the Saguachè Mts., on the Las Animas and Laplata Valleys, it inhabits similar stations to the *Succinea*. According to Mr. Binney the jaw is of the same type as *H. Lansingii*. It can scarcely be compared with any known N. A. species.

Geostilbia Gundlachi, Pfr. Dr. van Rygersma who has had an opportunity of examining the animal, describes it—"as having four tentacles, the 2 lower ones very small and scarcely perceptible, the upper thick, cone elongated, without any black spot, indicating eyes. The animal is of a citron color, the foot long and narrow.

The species was described as *Achatina Gundlachi* by Pfr. in 1850. Von Martens places it in *Acicula* (subgenus of *Cionella*), Arango in *Cæcilianella*, Bourg. and M. Crosse in *Geostilbia*. The dentition is of the same type as *Cæcilianella acicula* and *Stenogyra hasta*, Pfr. . The ribs of the jaw are similar to those of *H. Lansingii*. It is a widely distributed species, occurring in Cuba, Jamaica, Haiti, St. Thomas, St. Martin and Barbadoes. A closely allied if not identical species has recently been found in Guadeloupe by M. Marie.

Notes on certain Terrestrial Mollusks, with description of a New Species of the genus *Amphibulima*.—By Thos. Bland.

Reprinted from the Annals of the Lyceum of Nat. Hist., New York, vol. xi, November 1875, pp. 197—200.

In this paper 2 new species are indicated—*Amphibulima Rawsonis* from Island of Montserrat, W. I., and *Helix Van Nostrandii* from South Carolina.

Helix (Caracolus) Sagemon, Beck. The occurrence in Haiti of this species gives further evidence of the faunal connection of Haiti and Cuba. The most important identical species common to both islands are *Helicina rugosa*, Pfr., *Succinea ochracina*, Gundl., *Zonites Gundlachi*, Pfr., *Helix Boothiana*, Pfr., *Montetaurina*, Pfr., *vortex*, Pfr., *Oleacina oleacea*, Fér., *Strophia striatella*, Fér., *microstoma*, Pfr., *Macroceramus Gundlachi*, Pfr., *Cæcilianella Gundlachi*, Pfr., *Stenogyra hasta*, Pfr.

The author considers that *Helix Arangiana* of Poey is a variety of *Helix Sagemon*,—a view in which the author of the species acquiesces—and that *H. Gaskoini*, Pfr. is also referable to it, and not to *Helix bizonalis*.

Helix (Cepolis) cepa, Müll. Prof. Linden found at Port au Prince living examples of the var. *minor* of this species.

Liguus virgineus, L. Prof. Linden found shells of this species inhabited by living *Paguri*, on Gonave Island, “moving about briskly in an old pasture, at a distance of two miles from the nearest sea beach.”

Bulimulus Bahamensis, Pfr. Prof. Linden found at Port au Prince, the same variety that Mr. Sargent collected at Great Inagua.

Amphibulima Rawsonis, Bland. Allied in form to *A. pardalina*, Guppy, of Dominica, but very distinct from *A. patula*, and *rubescens*. Discovered at the Island of Montserrat (W. Indies) by Sir R. W. Rawson to whom the species is dedicated. With it was found species inhabiting the neighbouring islands, *H. Josephina*, *B. exilis*, *Helicina Guadaloupensis*, and *picta*.

Helix (*Triodopsis*) *Van Nostrandii*, Bland. Found at Aiken, South Carolina, it is nearly allied in form and character of aperture to *Helix introferens*. It connects *introferens* and *vultuosa* with, but is quite distinct from *fallax*.

Notes on American Land Shells and other Miscellaneous Conchological Contributions.—By W. G. Binney.

Reprinted from the Proc. Acad. Nat. Sci. of Philadelphia, U. S., vol. 2, part 3, pp. 140—254 and 21 plates.

The first portion of this highly interesting and important paper is devoted to the consideration of the jaws and lingual membranes of the Terrestrial Pulmonates of North America and embodies the results of Mr. Binney's labors during the last 30 years in this department, in which he has gained such great celebrity.

The best methods of procedure to extract the jaw and lingual membrane from the animal with the least trouble and without injury to its most delicate portions is given in full detail and the position and mode of action of these organs clearly pointed out.

Mr. Binney thinks that the two organs considered in conjunction furnish a good basis for classification, and from the results of an examination of a number of American and foreign species of Terrestrial Pulmonata, he divides the whole series of known species into two great divisions, characterized by the absence or presence of a jaw. The following genera belong to the first great division, they being deficient of that organ: *Testacella*, *Daudebardia*, *Streptaxis*, *Rhytida*, *Diplomphalus*, *Glandina*, *Streptostyla*, *Streptostele*, *Gonospira* and *Ennea*, all of which are also deficient of lateral teeth, some genera being without centrals, but all have aculeate marginal teeth. The following genera of which the dentition is not actually known are also placed in the first division: *Strebelia*, *Petenia*, *Spiraxis*, *Ravenia*, *Celiaxis*, and *Gibbus*.

The genera *Onchidium*, *Onchidella*, *Peronia*, and perhaps *Buchanania* also form a group of the first division, characterized by their

quadrate marginal teeth.

The second division is distinguished by the presence of a jaw, and we find in this division also the same grouping of genera into those with quadrangular and those with aculeate marginal teeth.

The following genera possess teeth of the aculeate type: *Limax*, *Alycus*, *Parmacella*, *Tomentia*, *Mariella*?, *Parmarion*, *Dendrolimax*, *Phosphorax*?, *Urocyclus*?, *Vitrina*, *Vitrinoidea*, *Vitrinopsis*, *Nanina*, *Stenopus*, *Vitrinocomus*, *Macrocyclus* and *Zonites*. The remaining genera have quadrate marginal teeth, and are subdivided into three sections which are divisible by the character of the jaw, which is either in one single piece, one single piece with an accessory upper quadrate piece, or in numerous pieces.

Those genera belonging to the first subdivision—with the jaw in one single piece—are formed into groups based on the absence, presence and peculiarities of the ribs of their jaw. But these divisions are not perfectly satisfactory, owing to the variability of these characters.

Of the genera without ribs are—*Philomycis*, *Parmella*, *Oopelta*, *Anaderus*, *Sagda*, *Patula*, *Polymita*, *Hemitrochus*, *Helicodiscus*, *Acerus*, *Corilla*, *Caryodes*, *Panda*, *Labyrinthus*, *Caracollus*, *Leucochroa*, *Cysticopsis*, *Plagioptycha*, *Leptoloma*, *Anostoma*, *Anostomella*, *Tomigerus*, *Boysia*, *Plectostoma*, *Hypselostoma*, *Achatinella*, *Clausilia*, *Stenogyra*, *Strophia*, *Buliminus*, *Balea*, *Pupa*, *Vertigo*, *Ferussacia*, *Cacilianella*, *Geostilbia*, *Azece*, *Tornatella*, *Zospeum*, *Holospira*, *Eucalodium*, *Colecentrum*, *Lithotis*, *Rhodea*, *Megaspira*, *Limicolaria*, but one species has a ribbed jaw, *Achatina*, *Pseudachatina*, *Perideris*, *Columna*, *Bulimus* which however as now constituted has various forms of jaw.

The genera of the second subdivision have decided stout ribs on the jaw and are the following:—*Arion*, *Ariolimax*, *Prophysaon*, *Pullifera*, *Veronicella*, *Binnia*, *Hemphillia*, *Helix*, *Gemalacus*, *Letournexia*, *Peltella*, *Xanthonyx*, *Simpulopsis*, *Pfeifferia*, *Berendtia*, and some species now included in *Bulimus*, *Cochlostyla*, *Buliminus*, and *Limicolaria*.

The genera *Gæotis*, *Amphibulima*, *Bulimulus*, *Cylindrella*, *Microceramus*, *Pinaria*, *Partula*, forming the third subdivision, have

Argiope cistellula at Weymouth.— I have lately found on this coast, specimens of the above species, thus confirming its southern range.—R. DAMON.

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